

## Prior Knowledge

### What you should know.

Humans have skeletons, muscular systems and digestive systems.

Names and functions of the main bones.

Names and functions of the organs of the digestive system.

How muscles work.

Different foods contain different quantities of carbohydrates, fats, proteins, fibre, vitamins and minerals.

It is important to have the right balance of these nutrients in the diet.

The human life cycle includes: birth, growth, reproduction and death.

When humans move from childhood to adulthood changes take place.

These changes occur during puberty.

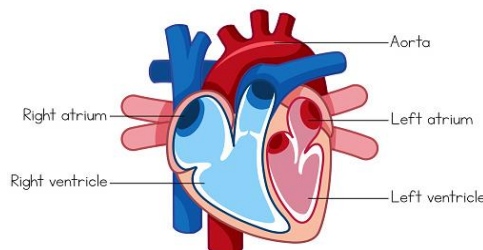
## Vocabulary Dozen

|                           |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>atrium</b>             | Either of the two upper chambers on each side of the heart.                                                                  |
| <b>balanced diet</b>      | A diet consisting of the correct quantities and proportions of foods needed to maintain health & growth.                     |
| <b>blood vessels</b>      | The vessels: arteries, veins, or capillaries, through which the blood circulates.                                            |
| <b>circulatory system</b> | The system of organs and tissues, including the heart, blood & blood vessels involved in circulating blood through the body. |
| <b>deoxygenated</b>       | Blood with the oxygen removed.                                                                                               |
| <b>heart</b>              | Major organ of the circulatory system made from cardiac muscle.                                                              |
| <b>muscle</b>             | Tissue composed of cells or fibres, the contraction of which produces movement in the body.                                  |
| <b>nutrients</b>          | Something providing nourishment in the form of protein, carbohydrate, fat, fibre, vitamins or minerals.                      |
| <b>organ</b>              | A part of your body that has a particular function. For example: the heart or lungs.                                         |
| <b>oxygenated</b>         | Blood enriched with oxygen.                                                                                                  |
| <b>respiration</b>        | The action of breathing.                                                                                                     |
| <b>ventricle</b>          | Either of the two lower chambers on each side of the heart.                                                                  |

## OAK CLASS

### Exercise & Health Science

#### The Heart Parts of a Heart



The heart is a major organ and is made of muscle. The heart pumps blood around the body through vessels and this can be felt as a pulse.

The heart pumps blood through the lungs in order to obtain a supply of oxygen.

Blood carries oxygen/essential materials to different parts of the body.

During exercise muscles need more oxygen so the heart beats faster and our breathing and pulse rates increase.

## The Circulatory System

The **circulatory system** is a group of organs which transport **blood** and **nutrients** around the body.

It contains two circuits: the pulmonary circuit and systemic circuit.

The pulmonary circuit carries blood to the lungs to collect oxygen and then back to the heart.

The systemic circuit carries blood around the body to deliver oxygen and then return deoxygenated blood back to the heart.

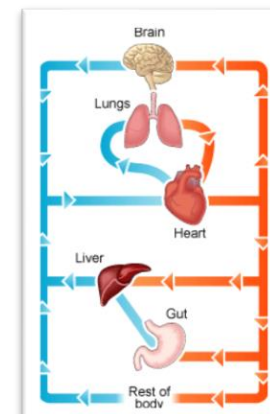
**The Heart** The heart is the **organ** responsible for pumping blood around the body. Your heart is about the size of your clenched fist. It is made up of four chambers. The human heart beats an average of sixty to ninety times a minute.

Blood enters the right atrium of the heart and is emptied into the left ventricle. The right ventricle then pumps blood to the lungs to collect oxygen before travelling to the left atrium. Next it is pushed into the left ventricle where it is pumped to the rest of the body via the aorta.

**Arteries** Arteries carry oxygenated blood away from the heart.

**Veins** Veins transport deoxygenated blood back to the heart.

**Capillaries** Capillaries are small blood vessels only one cell thick. They deliver oxygen and nutrients to the cells around the body.



## Diet, Exercise and Drugs

### Diet

A healthy balanced diet provides all the nutrients to keep the body fit and well.

Humans need a varied diet which includes:

Protein – for growth and help repair the body.

Carbohydrate and Fat – to provide energy.

Vitamins and Minerals – to maintain good health such as strong bones and teeth.



### Exercise

Exercise is essential to make bones and muscles stronger.

When exercising, muscles need more oxygen and we breathe more quickly so that the lungs can take in more air.

In turn, this makes the heart beat faster as it pumps the oxygen around the body. When exercising, the heart rate increases and this can be felt in the pulse.



Exercise makes the heart and lungs healthier.

### Drugs

*All medicines are drugs but not all drugs are medicine.*

A drug is a chemical that has an effect on the body.

Some drugs are prescribed by a doctor. If taken as instructed, these drugs can improve health, or cure or manage illness.

Some drugs can be bought "over-the-counter" and, if taken as instructed, can be beneficial to health.

Some drugs are legal such as alcohol or tobacco. These drugs can damage health.

Some drugs are illegal. These drugs can be extremely dangerous to health.

## Life Processes

All animals, including humans, display the same seven life processes. An easy way to remember them is **MRS NERG**: animals **MOVE**, **RESPIRE**, can **SENSE** the world around them, take in **NUTRIENTS**, **EXCRETE** (get rid of waste), **REPRODUCE** & **GROW**.